NOT AN OPTICAL ILLUSION

Sword Swallowing Really the Feat It Appears to Be.

Throats of Mountebanks Trained to Receive All Sorts of Objects-How the Trick Is Done - Valuable Service Rendered to Medicine.

Persons who visit those summer sea side resorts which are favored with a "boardwalk" with numerous small theatres along it, wherein are to be seen "continuous performances" of more or less merit, will have doubtless come across a "sword-swallower." This accomplished individual comes out dressed in a brilliant costume. At one side there are flags of different nations surrounding sabres, swords, and yatagans, and at the other a stack of guns pro vided with bayonets. Taking a flat sa ber, whose blade and hilt have been cut out of the same piece of metal, he introduces the point into his throat, taps the hilt gently, and the blade at length entirely disappears. He then repeats the experiment in swallowing the blade at a single gulp.

Subsequently, after swallowing and disgorging two of these same swords, he causes one to penetrate up to its guard, a second not quite so far, a third a little less still, and a fourth up to about half its length. Pressing now on the hilts he swallows the four blades at a gulp, and then he trikes them out leisurely one by one. The effect is quite surprising, and the larger number of spectators account for it by the supposition that the performer produces an illusion, merely appearing to swallow the swords, which in reality find their way into some exterior receptacle. This is, indeed, sometimes the case, but the majority of sword swallowers really do introduce into their mouths and food passages the blades that they cause to disappear. They attain this result as Parts of the throat, despite their sen-

sitiveness and their rebellion against contact with solid bodies, are capable of becoming so changed through habit that they gradually get used to abnormal contacts. This fact is taken advantage of in medicine. It daily happens that persons affected with disorders of the throat or stomach can no longer swallow or take nourishment, and would die of exhaustion were they not fed artificially by means of the oesophageal tube. This tube is of vulcanized rubber, which the patient swallows after the manner of sword swallowers, and through the exterior extremity of make daily use of this apparatus must serve an apprenticeship. The first introduction of the end of the tube into the pharynx is extremely painful, the second a little less so, and it is only after a large number of trials, more or less prolonged, that the patient succeeds in swallowing ten or twelve inches of the tubing without the slightest disagreeable sensation,

With the sword swallowers it is absolutely the same, for with them it is only as a consequence of repeated trials that the pharynx becomes sufficiently accustomed to it to permit them to fin-

All sword swallowers do not proceed in the same way. Some swallow the blade directly without any intermediate apparatus; but in this case their sabres are provided at the extremity, near the point, with a small bayonet-shaped appendage, over which they slip a guttapercha tip without the specators perceiving it Others do not even take such a precaution, but swallow the sabre or below his sternum the projection that the point of the sabre in his stomach makes on his skin.

The majority of sword swallowers, however, who exhibit upon the stage employ a guiding tube which they have previously swallowed, so that the experiments they are enabled to perform become less dangerous and can be vari- era of eternal calm. It would never be ed more. This guiding tube is made of | necessary to open the streets again, thin metal. Its dimensions permit of the easy introduction of the flat-bladed sabres, among other things, and of the performance of the four-sabre experiment, and of the introduction of sabres and swords of all kinds.

To explain the trick from a physiand pharynx first, then the oesophagus, mal state these organs are not in a that the mouth is in the direction of the oesophagus, the curves of which disap-pear or become less; the angle that the the part of the operator.

Sword swallowers have rendered im-portant services to medicine. It was due to one of them—a swallower of both swords and pebbles-that, in 1777. a Scotch physician, Stevens, was en-abled to make the first studies upon the gastric juice of human beings. In or-der to do this, he caused this individual to disgorge them again after a certain length of time. It was also sword swal-lowers who showed physicians to what extent the pharynx could become hab-Ituated to contact; and from this resulted the invention of the Foucher tube, the oesophageal tube, the wash-ing out of the stomach by means of a

Railways of England.

If our railways were at least well man aged we should only have to pay three times more for their services than the Germans, Swiss, French, and Belgians pay to their railways. But the assured monopolistic position of our railways makes them reckless, and causes enormous waste of time and money, which also has to be paid for by the which means out of the pockets of the wage earners in our productive industries. Our rallways stand, as regards their performance, at exactly the same point on which they stood thirty years ago, and are on the lowest level of railways in any of the leading countries. True, they of traveling will be considerably cheaper any of the leading countries. True, they of traveling will be considerable have introduced a few Pullman cars, etc., than the railway-London Mail.

out these Pullman cars are of little us to the nation, and no use at all for the development of the country. They serve only for the comfort of a few individuals, not for the prosperity of the country. Our trains are made up of toy trucks arrying five to ten tons of goods each nd are pulled by toy engines.

In other countries large engines pul

arge cars. Moving goods in small par-eis, in small wagons, and in small trains f large ones can be had, is like emptyag a tank with a teaspoon when a bucket s available. It means an enormous wast of time and money. An English goods train moves from 800 to 1,500 tons of goods One thousand five hundred tons of goods in ten trains means ten times the expenses for drivers, stokers, brakemen, she machines, and sheds, machine cleaning machine repairing, a huge additional coal bill, and blocked lines all over the system. The same thing applies to passen can see on any of our main lines dally starting with two engines each, might be hauled by one strong engine, at little more than one-quarter the cost. In this way the hard-won earnings of the nation are being wasted by our railway companics, which consequently charge us rate about four times larger than they ought

In this country the legal maximum fare in the third class is about 1 penny per mile. In the United States the legal maximum in the first class is 1 penny per

NEW LONDON SUBWAY.

Grent Rapid Transit Scheme Now Being Developed.

There is now in process of developmen a rapid-transit scheme which, if it is car-ried out, should revolutionize the present congested conditions of many of London's principal thoroughfares.

Briefly, the proposal is to construct a shallow underground tramway—the trams of course to be propelled by electricity from Westminster, up Parliament Street, through the Strand, Fleet Street, Cheap-side, and past the Bank of England to the London County Council's tramway terminus at Moorgate.

The "father" of the scheme is J. A. chairman of the highways (tramways) committee. Mr. Baker, interviewed by a "Daily Mail" representative, willingly consented to go into details.

"We are sending," he said, "our tramays manager and our electrical engineer to Hungary and America to study the system of underground tramways at first hand. They go as the accredited representatives of the council, and when they return and hand in their report we shall be able to say approximately what we intend doing in the matter."

There were, however, Mr. Baker went on to point out, many obvious advantages attaching to the scheme as a whole, leaving details of construction and working temporarily out of the question. One was, which milk or bouilion is introduced. of course, the rapidity with which this But the patient before being able to particular kind of subterranean transit could be operated. At present a journey by 'bus from Westminster to Moorgate Street occupies from thirty to thirty-five minutes, even under favorable circumstances. The underground electrically propelled tram would cover the same disin less than half the time. would it be necessary for passengers, in order to reach the cars, to take a long journey by lift down into the bowels of the earth. A dive into a sort of ornamental kiosk conveniently situated at the edge of the rondway, a trip down a dozen steps and-there you are. The top of the tunnel through which the trains would travel would be only about two feet be-low the level of the roadway, and the ally swallow objects as large and rigid said tunnet, in addition to its primary and as swords, sabres, canes, and even bilelectric underground wires, and pipes of

every description There would thus be an end, at once and forever, to the eternal tearing-up and relaying of the thoroughfares affected, a nuisance dating back-so far, at all nuisance dating back—so far, at all specimens at the National Museum, are the true answer to the question, "What is events, as the Strand is concerned—to the little more than an expression of the a soldier?" is "A man who can kill with a early part of 1799. Of course mains and up and relaid. Some would have to be diverted. Others would be abandoned, determining the topography that reshall never get a true reform of the army. sword just as it is. It is said that an and an entirely new system constructed sulted from glaciation.

This part of the work would probably be furgler, allows the spectators to touch very difficult and expensive, but in the

end it would pay. The first step in the building of the tramways would be the excavation of a throughout the entire length and width

As has previously been intimated, the details of the scheme have yet to be formulated; but enough is known of similar systems already in operation in Budapest, Boston, New York, and elsewhere, to in dicate the main lines upon which Lon-don's must of necessity be carried out. Supposing the scheme is finally approved ological standpoint, the sabre swallow- by all the authorities concerned the initial ed by the performer enters the mouth stage will be the cutting of the trench traverses the cardiac opening of the sity, in our comparatively narrow streets, stomach, and enters the later as far as extend in width from pavement to pave the antrum of the pylorus-the small ment. This may, and probably will, be cul de sac of the stomach. In their normal state these organs are not in a
traffic as little as possible. Then will folmal state these organs are not in a low the process of "roofing in." Steel straight line, but they are forced so girders laid transversely will form the top by the passage of the sword. In the first place the head is thrown back so either end by perpendicular pillars of like construction and of similar material. The girders will carry a layer (two feet thick) pear or become less, the angle that the oesophagus makes with the stomach becomes null; and, finally, the lastnamed organ distends in a vertical direction and its internal curve disappears, thus permitting the blade to traverse the stomach through its greater diameter; that is to say, to must naturally be considerable, more establishment of soils of soils concrete, and this will form the new roadway, over which 'buses and cabs tout not so many, it is hoped will travel with the story two or three minutes. The cost of such an innovation must naturally be considerable, more establishment. of solid concrete, and this will form the be mentioned that, before such a result can be attained the stomach must what is now the roadway. These, of have been emptied through fasting on course, would have to be negotiated for and acquired.

For the rest, it may be mentioned that there will be absolutely none of the gloominess usually associated with underground lines; the interior of the stations will be lined with white enameled bricks and 'illuminated throughout by electricity, while the cars will be der to do this, it can be derived to swallow small metallic tubes pierced modious, tastefully uphoistered and well-with holes and filled with meat accordighted. It is probable that the thirding to Reaumur's method, and got him rail system of supply will be used, as permitting of a lower pitched tunnel than the overhead trolley system. Finally, it should be stated that the proposed lin from Westminster to Moorgaic is in the nature of an experimental one. Should it prove to be the success its projector hope and desire, then similar lines will rubber tube used as a siphon, and the recent methods of illumination and photographing of the stomach.

be carried underneath Piccadilly, the new Strand-to-Holbern thoroughfare, and other streets wherein the construction of surface tramways would be undesirable or impracticable. The benefits of the sys tem in such a huge city as London are obvious. Lumbering, crawling 'buses with the tiresome stops at all the prin cipal crossings where the traffic is regulated, will be things of the past. The trams will glide smoothly and quickly, carrying passengers from point to poin without any aunoying waits. In connec tion with the surface tramway lines, pecple living in the suburbs wil be able to reach their places of business in even quicker time than by train when the wall to and from the station is taken into consideration; and not only will time be say

SCULPTURED BY GLACIERS

Beautiful Geological Specimens at the National Museum.

Rock Surfaces Delicately Carved and Grooved by a Prehistoric Convul. sion of Nature-How Facts Are Established by the Scientists.

In the section in the National Mueum devoted to geology are specimens of rock surfaces curiously and sometimes beautifully grooved and carved. The carvings in some cases are so per fect as to suggest the work of the skilled artisan. As a matter of fact, these apparent moldings are not moldings at all, nor are they the handiwork of man. They represent a convulsion of nature at a period so remote that there is no mode of reckoning it. In other words, they are the rock-scorings of the glacial invasion of the northern part of this country. Whether the ice came down eeping over the face of the country. or by icebergs and ice floes sailing over submerging waters, science is unable to determine. Be that as it may, that the ice came sweeping down over the face of the earth in huge quantities and with irresistible force these rocks in the Museum attest.

by the invader. To the geologist their character reveals the nature of the lev visitant as tracks reveal the trackmaker. The glacialist distinguishes to a prehistoric monster who leaves a print of its foot imbedded in the rock. From such slight tokens of its some it, and describes its habits.

Baker, a prominent member of the Lon-don County Council and for several years gy the common term "grooving" is used to describe all the effects of the glacial invasion on rock surfaces alluded to, Respecting their mode of origin glacial grooves belong to two classes, which it is of some importance to distinguish. Still, given an element of took or good The one class had an existence as management, you may travel short disgrooves prior to the incursion of the ice and were simply molded and modified by it. The other class owe their origin solely to glacial action.

Previous to the sweeping down of the ice the surface of the rock had been subjected to various destructive agencies which produce great inequalities in it, among which were surface grooves. Thus the invading ice found furrows formed already. Where these lay coincident with its course its work was merely to rasp them out and polish and striate their sides. In their remodeled form they sometimes have the aspect of channels due wholly to glacial action; but the observation of the expert often discovers features which, in their nature, indicate that they could not have arisen solely from glacial abrasion. There must have been a pre-existent channel to guide and mold to itself the abrading ice.

A main element in the grooving was, of course, inequality in the hardness of rock. This finds its simplest expression where beds of unequal hardness were slightly upturned so as to present their beveled edges to the ice, which acted aduit, through which would be carried along them like a beading plane. In the whole system of gas and water mains, such cases the soft beds were easily removed, while the harder ones were left standing forth as ridges, the whole assuming a fluted surface. Greoves of this sort, which are to be seen in several

That streams of water flow beneath and to force it hither and thither at will is unknown. It is quite certain, howmuch abrasive power, because they are is attested by observation. The must obey, and he must, also, if possi curious form of some of the rockcorings suggests that they were partially worn by a stream of water, while their engravure points to their occupancy by ice which was molded to their tortuous courses, and which in turn refashioned their walls, reducing them to those smooth, striated surfaces and those beautiful curves that attest, to the eye of the trained observer, the work of a glacier.

TRAVELING IN ENGLAND.

One American Who Prefers Britis Methods to Those Used Here.

It is still, to my mind, an open que on whether the English or the American node of railway traveling is the more comfortable. One oscillates between the cision, with views that vary according to the experiences of each journey. At present the English system has my vote Nothing at any rate could have been more easily managed than yesterday's journey. My companion and myself tooi a hansom from our doorstep and drove to Euston with the baggage on top. At the station the difficulty was not to ge waited on, but to prevent more than on In three minutes after dismissing the cal we had bought the tickets and had foun and were seated in an empty compart ment. The baggage was labeled and put in the luggage van a few yards ahead of us, and the porter pocketed a tip of pence not only without grumbl with an obvious recognition that his services might have been had for a penny or even twopence less. Nothing so facould have been simpler. We had the car riage to ourselves, and neither at Willes den nor Coventry, the only two places a which we stopped, did anyone attempt

get in. The English railroad carriages are three classes, first, second, and third. The first class seats only six persons, leaving imple elbow-room for each; the secon and third seat ten, five on each side. The difference between the last two classes is mainly one of upholstery and price, and sometimes of position. The holders of third class tickets are usually placed next to the engine, where they may bear the brunt of a collision or at the end of the

train where the folding is the greatest. It may perhaps be necessary to remind those who have not been in England that the ordinary railroad carriage here is nothing like the American car. If one were to take a New York Central car and divide it into eight water-tight compart ments, each about seven or eight feet long and ten or twelve wide and each omplete in itself, and were to label each compartment a carriage, one would get a rough but fairly accurate idea of what is still the distinguishing feature of rall-roads in England. The English carriages do not communicate with one another their doors open onto space when in mo-tion or onto a platform when drawn up in a station, and none of them is supposed to hold more than ten people. There are two seats, facing one another and run-ning along the width of the carriage Over the seats are racks for one's lighter baggage and from the centre of the car-riage roof a lamp is suspended. Under certain circumstances-for instance, when one has the carriage to oneself-English traveling is a delight. The carriages on all the chief lines are at least as com-fortable as the Pullman car on an American road, and it is not so difficult as it sounds to secure one from invasion. by land or sea, whether by glaciers guard is always ready to lock the door for a shilling and bundle would-be intruders eisewhere.

the guard. My companion and myself by sheer good fortune had the carriage to oursely-s all the way from London to Birmingham. When the train drew up at New Street station it was the work of less than three minutes to have a porter These rock-scorings are the trails left | pick out our baggage and call up a hansom. Had we been in America we should have been obliged (i) to make a special expedition to purchase our tickets a day or two before we intended to use them; (2) to send round for an express company with as much certainty the traces of a to take charge of our baggage; (3) to glacier or of an iceberg or ice floe as a travel in a car with some fifteen or hunter the track of a bear or a moose or a serpent. A glacier may be likened to a prohistoric monster who leaves to a prohistoric monster who leaves sell us the daily papers, boxes of candy the latest novels, and a photographic album of the place we were going to, and time existence Prof. Owen builds the (5) to have run the risk of not getting our semblance of the entire animal, classes baggage delivered until the day after our arrival. Yesterday we had privacy, every reasonable comfort, and full command over our belongings. Of course, yestertypical. You may have to put up with a crowded carriage filled with objectionable people, from whom you have no chance of escape till the train pulls up at a station. tances in England with a degree of com-fort that no American railroad can provide.-New York Commercial Advertiser.

THE IDEAL SOLDIER.

Some of the Requisites Demanded in a Modern Fighter.

The only answer to the question, "What is a soldier?" which gives the essential, the sine qua non quality is the answer, "A man who can kill other men with rifle-fire." A soldier is a rifleman. A man may be able to kill other men with rifle-fire, and not be a perfect, or a rea-sonably efficient, or even a useful soldier, but unless he can kill with the rifle, he is not a soldier at all. A man may be a splendid marcher, he may be trained to take cover with extraordinary skill, he may be an expert at digging trenches, his drill may be perfect, his power of turning himself out smart and clean, and with all his belongings in the most pertect order may be miraculous, and yet if he cannot shoot with a rifle, he is no soldier. Imagine an army composed of men possessing all the qualities we have enumerated except the power of shooting, and then imagine another composed of men who could all kill with the rifle, but had only that gift. Both would be very bad armies, no doubt, but who would hesitate to declare that the rillemen were 'be soldiers, and the other army, though composed of very accomplished men, were without the thing which is essential to

Needless to say, we do not insist that unequal hardness of the rock beds. On rifle," merely as a piece of dialectical pipes of all kinds would have to be taken a large scale this is thought to have analysis. We insist on the fact because Rife shooting must be the foundation stone on which the army rests. On that glaciers has been determined by most foundation must be built up a superstruc-abundant observation, but excepting in ture which seems, and in a sense is, as transways would be the excavation of a vast trench sixteen to eighteen feet deep throughout the entire length and width trated, the precise relations of the ice bor- always remember that though can be no of shade trees for parks and streets generally make their choice with reference throughout the entire length and width of each street, the whole of the wheeled to the stream are chiefly matters of conjecture. Whether the ice continually verted to the side streets. But after this great cataclysm, there would ensue an and to force if hither and thilber at will and to force if hither and thilber at will "A rilleman," let us next ask and try to or whether the stream maintains itself answer the question, "What is a fully by melting and wearing back the en- quained soldier?" So many things are croaching ice as fast as it presses upon | necessary to make, we will not say the it, and so retains a constant channel, perfect soldier, but the soldier who shall be able to render his ability to use his ever, that such subglacial streams have know which to name first. In our opin much abrasive power, because they are loaded with fine, rasping giacial silt, a be laid on the foundation of rifle shooting most effective abrasive agency. That is that of discipline—using the word in its they cut for themselves rock channels widest sense. The rifleman must be not is unquestioned; that into these the ice only willing, but able to give an instant, subsequently molds itself and in turn and what is more, an intelligent, obedimolds them by its own abrasions ence to the orders of those above him. He seize the object of the order, and obey not like a machine, but like a thinking man. He must-that is, not be hypnotized by formal drill into a mechanical obedience, but must give an obedience which is o-operative and not merely passive.

Next to this moral essential, we should out for the modern soldier, the hunter and scout qualities-the ability to take cover, to watch the enemy and his movements, to see without being seen, and to take intelligent advantage of all means of protection from the enemy's fire, while at the same time pressing his own advance Next, the soldier should be able to use the spade, and be capable of rapidly construct-ing protective works, which, though effective, shall be almost invisible to the enemy. These are qualities for use in the fighting line. To get him into the fighting line the soldler must as far as possi-ble be endowed with he gift of mobility. He must be good at marching, but he must also be able to make use of other forms of transport if, and when they be-come available. A soldier must be able to ride a horse, should it be possible to provide him with that means of getting over the ground, and further, he must be able to look after his horse if he gets one. Again, he should be able to ride and mend a bicycle if fortune should enable his coloel to "commander" a thousand bleycles and so turn a three days' march into a day's march. But though this disciplin-ed rifleman, who can stalk, scout, and dig, and also ride either horse or bicycle if re he can no doubt be improved by the addiion of certain other things-accomplish ments rather than essentials, but none the

ess of importance.
If he is given a physical training which less of importance.

If he is given a physical training which makes his frame and his muscles like those of an athlete, he will do doubt endure longer and shoot more steadily than if he has had no physical drill. Furthermore, if he is something of a gymnast, he will, if he is making a rapid advance on foot, be able to surmount obstacles with much greater ease. It will clearly, for example, be good for him to be a swimmer. Again, if he has learned the handling of a bayonet, his enemy will fear the chance that he may get to close quarters more than if the same enemy knows that he has no skill with the bayonet. Lastly if the soldler happens to be an expert at drill in close formation, he and ten thousand men like him may be able to get through the marrow streets of a great city more quickly and with far less confusion than if it has no practice at moving in close order.—London Spectator.

TO PROTECT SHADE TREES.

Dr. L. O. Howard Offers Suggestions on the Subject.

The Entomologist of the Agricultural Department Tells How Defeliation May Be Averted in Washing ton-Insects That Cause Havoc.

The beautiful shade trees of Washingn are in a fair way to become defollated. It is not the common caterpillar that is doing the most mischief this year, but an ubiquitious little creature that rejoices in the psuedonym of thyridupteryx ephemeraeformis, or bagworm.

Dr. L. O. Howard, Entomologist of the Department of Agriculture, when questioned as to the kind of insect which is working such havoc in the verdure of the parks and public places of the National Capital, stated that this did not seem to be as bad a year for caterpillars as usual. Discussing the question he said that most of the defoliation was due to the bagworm, which seems to have visited Washington in greater force this lers eisewhere.

Yesterday there was no need to call in er exclusive insect has the habit of spinning a web or bag about itself so that it may be safe from the attacks of birds and other enemies of insect life. time to efficiently combat the depredations of this insect, Dr. Howard says, has

passed for this summer.
"The best time to spray the trees," Dr. Howard says, 'is in the spring. Paris green should be used. A good way to get rid of the insect is to go over the trees in the fall or winter when the branches are bare and remove the bags."

Besides the bagworm, which is much in evidence this year, some of the most relentless insect enemies of leaf life are the elm leaf beetle, the white-marked

tussock moth, and the fall webworm."

The elm-leaf beetle is not to be so ger erally feared as some of the insects nam-ed, because as far as is known no other tree than the eim is attacked, the common English elm being the favorite variety. The beetle makes its winter home under the loose bark of trees or in the cracks of boards or telegraph poles, and in the former case as soon as the buds begin to break forth in the spring begins to feed upon the leaflets. They feed until the aves are nearly grown, and then the females lay their eggs, which are deposited on the lower sides of the leaves, being sometimes arranged in two or three irregular rows. In about a week the larvae are hatched and begin operations at once on the inside of the leaf, which they soon reduce to a skeleton if left undisturbed.

The most satisfactory spray to be used

against these insects is paris green, lon-don purple, or arsenate of lead, and the best time is just after the buds have bursted. A second spraying should be onducted two weeks later and a second

specially if heavy rains have fallen. The white-marked tussock moth will at-tack aimost every variety of shade, truit, and ornamental trees, having an apparent preference for the soft maples, poplars, elms, alders, and birches.

The female moth lays the eggs in Sep tember, and it is in the egg state that the insect passes the winter. In Washington the caterpillars hatch in April or May. After the insect has gorged himself for four or five weeks he begins to spin a cocoon of delicate grey silk. Within a few hours after the completion of the cocoon tion of identity, of course, and, though the larvae are transformed to pupa, and the jury disagreed, if I mistake not, at remain in the pupae condition about two weeks.

Upon emerging from the pupae condiion the adult insect presents the phenomenon of an absolutely wingless female and residence, travel, appearance at a given winged male, in this respect resembling the bagworm.

mended for the singing of the eim leaf beetle are also recommended as sprays.

The webworm is an almost universal evidence that Stuart had a wen on his feeder, the records of the Division of Entomology showing about 120 species of still been present or the scar left by an with arsenical poisons and collection of the cocoons are two remedies advised. He heard the evidence regarding the wen erally make their choice with reference to rapidity of growth and amount of shade produced. The maple and the box elder answering these requirements are introduced in great numbers. But the ties, most susceptible to insect destruc tion. Among the large shade trees the different species of oaks appear to be most immune. Washington is unfortunate in that the shade tre those in the parks are under the same control. The appointment of a forester and an entomologist to supervise the care of our shade trees would it is clai a wise move on the part of the District Board.

A bulletin issued by the Department of Agriculture contains the following remarks on this subject:

"A most excellent plan was urged by one of the Washington newspapers in the summer of 1894. It advocated a tree-protection league, and each issue of the pa per through the summer months contain ed a coupon which recited briefly the destrability of protecting shade trees against the ravages of insects, and enrolled the signer as a member of the league plede injurious insects upon the city shade trees immediately adjoining his residence, This is only one of several ways which might be devised to arouse general inter-

est. "The average city householder seldon has more than a half dozen street shade trees in front of his grounds, and it would be a matter of comparatively little expense and trouble for any family to keep these trees in fair condition. It needs only a little intelligent work at the proper time. It means the burning of the of the fall webworm in May and June; it means the destruction of the larvae of the elm leaf-beetle about the bases of elm trees in late June and July; it means the picking off and destruction of the eggs of the tussock moth and the bags of the bagworm in winter, and equally simple operations for other insects should they ecome especially injurious. What a man will do for the shade and ornamental trees in his own garden he should be willing to do for the shade trees ten feet in front of his fence."

The Modern Broom. The lingerer in Broad Street station aft.

r midnight may see an odd sight-the leaning of the great terminal by the use of a blast of compressed air. Not a nov-elty by any means, nor an addity, for the same process is in use elsewhere. The air current has long been in use in

nnection with Pullman cars, and with the cleaning of cushions in them and oth-er cars. The last few years has seen it introduced for the puriose of taking th dust off the walls and decorations in the station, for which purpose it is found far more satisfactory than the bucket, duster, and soap brush of the olden day. The application of the air current is simplicity indeed.

From the powerhouse at Eighteenth Street to the Broad Street station pipes are laid, carrying the compressed air. these pipes a rubber hose is attached for all the world like a garden hose-in fact, it is a garden hose, or was intended to he—with a special nozzie. This hose is long enough to reach the ceiling. And the man using it carries it about, blowing the dust off the seats and from the ornam

tal figures in the decorated walls.

To the country visitor in particular the hose seems a thing of mystery. To the emigrant from foreign shores it seems uncanny and supernatural. The man with the hose, if Mr. Markham's hero will par-don the expression, fills the latter with awe and sometimes with fear. As to the onishment and then ask what it can be that comes from the nozzle of the hose, Air! Great Scott! Funny air they must have in Philadelphia that will act that

way. With this appliance, the work of dusting out the entire great station waiting rooms occupies but a few hours. Sometimes it in done in two hours. Nothing is wet, and everything can be left just as it is In the crevices and corners, in the back lepths of the carvings and niches, in all the odd places and narrow cracks, the air blows its cleansing way.

In Broad Street Station the expression 'turning the hose" on anything has naturally acquired a new significance.-Phila-

MYSTERIES OF IDENTITY.

trange Cases Which Have Long Puzzled Police and Scientists.

The announcement made in the public ournals that an interesting case of disputed identity connected with a charge of murder was lately investigated at Colchester revives a subject of extreme in-terest not only to the public, but equally to the medical man and the law. Ques-tions of personal identity have always possessed a fascination for the novelist, as well as for the chronicler of causes of a legal kind. Certainly, if we are to judge by the records of jurisprudence of the dif-ficulties which often attend the establish-

a highly complex nature. Miss Braddon

. But in real life, as I have said, there is as much that is startling to be found when questions of identity have to be threshed out in our courts of law. Seemingly easy and simple conditions of settling the personality of an individual are tered the full name in his bills often supplanted by difficulties arising on One more lengthy title wil the one hand from likeness to somebody else and on the other from varying testimony of witnesses. The feature which appeals to one person is missed by an-other, and so the conflict of evidence continues. The Tichborne case offers an apllustration of this fact. Omitting the evidence of those whose ir terests were bound up with the claimant's case, there remains a certain amount of testimony, ugh in its nature, which asserted its belief that he was Roger Tichborne The classic case of Lesurques and Dubosc dramatized in the "Lyons Mail," is un other illustration which had a ghastly nding of tricks which the irony of fate may play with coincidences.

There was a case tried not very long ago in London, where a man was charged with bigamy. He married a Brighton lady under a certain name, say A, and it was alleged he was really B, a married Londoner. The case hinged round the ques-tion of identity, of course, and, though the first trial, the evidence that A and B were one and the same man satisfied a second jury, who duly convicted him. In such cases, of course, it is the facts of time at a given spot, and so forth, which make or mar the case of the accused-A remedy advised by the Department seeing that nobody has yet been able to of Agriculture to destroy the eggs of emulate the dexterity of Sir Boyle Roche's these insects is creosote oil, to which famous bird. More luck than the bigaturpentine is added to keep it liquid in mist was one said to be a man called cold weather, and tar to blacken it so Stuart, who was charged at the Old Ballthat treated egg masses can be recog-nized easily. This mixture can be daub-His identity with Stuart was sworn to by ed on the eggs by using a sponge at the end of a long pole. The liquids recommended for the slaughter of the elm leaf was Stipler, and denied that he was the trees attacked by the insect. Spraying operation which removed it. Happily, Mr. and gave his testimony that the presence of either the wen or the scar would settle the mater. The prisoner showed neither

and was duly acquitted.
In the case of the dead identity is harder to establish than in the living. Death often alters the aspect so deeply that ordinary evidence is apt to fail in settling the disputed point. Many a dead man has been identified even by a wife as a certain individual, while a few days late the supposed dead person has walked into his house. Where science steps in to solve problems of identity is in cases solve problems of where possibly only fragmentary portions of a body have been found and where body has to be "reconstituted," as they say in France, when the scene and details of a crime are reproduced for the particular benefit of the accused person. In the Wainwright case science was able to declare the identity of Harriet Lane.

the victim, in this way. The Waterloo bridge murder of 1857 is another celebrated example of the recon-stitution of the individual. Here, from the mutilated remains found in a carpet bag on one of the piers of the bridge, the experts were able to show that the victim was a man of between thirty and forty years of age, about five feet nine inches in height, of dark complexion and killed by a stab between the third and fourth ribs on the left side. The fate of Count Fosco in "The Woman in White" was believed by many to represent the end of the Waterloo bridge victim.

Sometimes things are complicated through purely accidental circum-stances. Here is a case in point. On August 19, 1831, an old woman, Caro-line Walsh by name, from Kilkenny, went to stay with one Elizabeth Ross and her sband in Goodman's Fields, London. After that evening all trace of Caroline Walsh disappeared. Mrs. Ross was ar-rested and charged with her murder. But the defence alleged that a Caroline Weish, also an Irish woman, who had been conveyed on August 20 to the London hospithe missing woman. Caroline Walsh had a basket containing the tapes and other articles she sold, but so had Caroline Welsh. So far the identity appeared to favor the defence, but closer scrutiny showed the flaws in the plea. Carolin-Walsh was a clean, tidy woman, aged eighty-four, with grey hair and with peerfect front teeth. Caroline Weish was a dirty, emaclated woman, nged sixty, and all her front teeth had disappeared, Again, while Walsh came from Kilkenny it was discovered that Weish was a native of Waterford. The defence broke down, especially as evidence was forthcoming that Walsh had been murdered and her body sold for anatomical purposes. Mrs. Rosspaid the penalty of her crime—Chicago Chronicle.

(From the Buffalo Express.)

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Some men are great jokers, they think.

That's aimed at Schinkens.

He and his wife were afting on the veranda.

He had the paper.

After creating awhile he spoke.

"Here's a story about a woman saving a train with her apron," he said.

"Dear, dear, did she wave it as the engine aime along?" asked his wife.

"No," gruntes Schinkens, "she waited under the burning trestle are when the train feli through she caught it her apron."

And the cross fool actually expected his wife o laugh.

FASHIONING BOOK TITLES

How the Modern Successful Novel Receives Its Name.

lrevity the Latter-Day Alm-Some Masterpieces of Nomenclature-The Old Half-Page Designation-Some Very Amusing Misconceptions.

In the choice of a book title at the present moment, brevity is the first consider-ation. Publishers object to long names, booksellers dislike them, and the general public cuts or mutilates them. A title must be short, distinct, and easily remembered. Every word beyond the three or four that are absolutely necessary is a word too many. It is better for a title to explain little or nothing, than for it to explain too much. When Kinglake christened a fascinating book of travels "Eothen," readers could draw no possible foretaste of its contents from that mystic Eastern word; yet the title was a good one. Only those few who understood Romany could judge what to ex-pect from Borrow's "Lavengro," yet that aiso is a masterpiece of titles. At one time Borrow had contemplated the far less satisfactory title of "Life: A Dra-ma," which would have been both vague and misleading. The choice of title is, indeed, one of an author's most difficult and, often, worrying tasks.

The old-fashioned title erred in trying to combine the duties of preface and con-tents list with its own natural office. It would take far too much space to quote many such titles; but as a moderate example, we may notice the title of a pop-ular work published by William Hone in the year ISE. This title runs as follows: "The Year-Book of Daily Recreation and Information, Concerning Remarkable Men ficulties which often attend the establishment of the identity of the living, and of the dead still more, the settlement of the "why's who" point is apt to be one of Novelties, on the Plan of the Every-Day Book and Table-Book; or Everlasting Cala highly complex nature. Miss Braddon in "Henry Dunbar" uses the identity question as the pivot of the story. James Payn wrote a novel which had for its burdon the same idea and the fertile brains Pays wrote a novel which had for its ourden the same idea, and the fertile brains
of other romancers have utilized the likeness of one being to another as the crux
of the situations they depict.

Hundred and Sixty-five Days in the Past
and Present Time; Forming a Complete
thistory of the Year, and a Perpetual Key
to the Almanac." Of course, this title admits of ready condensation, and the book mits of ready condensation, and the book is now always simply referred to as the "Year-Book;" but it is a fair sample of our forefathers' love of multiplying words. We may take it for granted that at no time would a bookseller have en-

One more lengthy title will be quite one more lengthy title will be quite enough for quotation; this is the title pre-fixed to a book in its second edition, pub-lished by Bohn in 1842: "Encyclopedia of Literary and Typographical Assectote. Be-ing a digest of the most interesting facts illustrative of the History of Literature and Printing, from the earliest period to the present time. Interspersed with bloprinters, type founders, engravers, bookbinders, and papermakers of all ages and countries, but especially Great Britain; with bibliographical and descriptive ac-counts of their principal productions, and occasional extracts from them. Including curious particulars of the first introduc-tion of printing into various countries, and of the books there printed, notices of early Bibles and Liturgies of all countries, especially books printed in England or in English; a history of all the news papers, periodicals, and almanacs publish ed in this country; and an account of ink and paper, writing, and printing materials, the invention of paper and paper machines, compiled and condensed from Nichol's Literary Anecdotes, and numerous other authorities, by C. H. Timperiey; Second Edition; to which is added a continuation to the present time, comprising recent biographics, chiefly of booksellers, and a practical manual of printing. Lon-

and a practical manual of printing. London."

Readers of the present day, whose reading is often almost confined to skimming the headlines of a newspaper, would never wade through such a title as this. It must be understood that neither of these is an extreme specimen of what the old-fashioned title-maker could do. Even that delightful work which we now briefly describe as "Boswell's Johnson" has a somewhat formidable front page, "The Life of Samuel Johnson, LL. D., comprising a Series of his epistolary Correspondence and Conversations with many Eminent Persons: and various original Pieces of his composition: with a Chronological Account of his Studies and Numerous Works, the whole exhibiting a view of Great

Account of ms Studies and Numerous Works, the whole exhibiting a view of Literature and Literary Men in Great Britain for nearly half a Century. As opposed to this, Lockhart gave us simply "The Life of Sir Walter Scott."

In the case of a work of history or biography, the choice of a title is usually easy and obvious; often there are no alternatives to choose from. With fiction it is difficult. Dickens considered twenty-one different names before he selected "The Tale of Two Cities." He always liked to have his title chosen before he seriously began to write at a tale. He said once: "I shall never be able to do anything for the work until it has a fixed name." In general the best name for a novel is the name of its hero or heroine. Dickens generally acted on this principle himself, and his departures from it as in "Our

for the work until it has a mace halled in general the best name for a novel is the name of its hero or heroine. Dickens generally acted on this principle himself, and his departures from it, as in "Our Mutual Friend" and "Great Expectations," are not exactly happy. Scott did the same for the most part; but he sometimes bickered with Constable about his titles. It was Constable who prevailed on Scott to use the name of "Kenilworth," instead of cailing that romance "Cumnor Hail," and the publisher also suggested that the "Abbot" should be christened "The Nunnery," as a more fit companion title to the "Monastery."

In the last resort many an author has been compelled to take the suggestions of his publisher in this matter of titles. It was Blackwood who persuaded George Eliot to select the name of "The Mill on the Floss," instead of cailing that tale "Sister Maggie." The publisher's choice was the more picturesque, though less really appropriate. One of Hawthorne's novels was actually published under two distinct titles. In America it appeared as "The Marble Faun," in England as "The Marble Faun," in Englan

ers. "Lorna Doone" was sought for the libraries because the good loyal pu-ladies chiefly, though it had somethin ladies chiefly, though it had something to do with the marriage of the Princess Louise and the Marquess of Lorne. "The Bible in Spain," though its title is absolutely correct, proved a stangering surprise to many worthy and plous subscribers to the Bible Society. In one of his essays Mr. Birrell chuckles at the thought of boys being allowed to read this work of Borrows on Sunday, under the idea that it was quite a "Sunday book."

That a title is truly of importance was proved by the fact that a tale christened "The Champion of Virtue" did not attract the public at all; but when it was renamed "The Old English Baron" it went off charmingly. Writers of the date of

"The Champion of Virtue" did not attract the public at all; but when it was renamed "The Old English Baron" it went off charmingly. Writers of the date of lane Austen delighted in moral tities, such as "Pride and Prejudice." The public now does not care for such labels. Titles of epithet or self-criticism, such as "Babs, the Impossible," or "Peg. the Kake," are more popular. More than half the criticism poured upon one of Mr. Caine's recent novels was directed against its title.

The wise author is still generally content with the name of his leading character; such titles as "John Inglessant" or "Ayimin" are wholly satisfactory. With few exceptions, the greatest works of fiction are christened in this manner—books like "Guy Mannering." "David Copperacid," "Esmond," "Pere Goriot," "Anna Karenina." There are exceptions, as when Thackeray christened a study of human life "Vanity Fair," and "Victor Hugo, studying a lower phase of the same free entitied his picture. "Les Miserables." But these titles in themselves are great, inasmuch as they are brief and self-descriptive. Balzac was actuated with the same broad, philosophic spirit as Thackeray, when he gave his works the general title of "The Human Comedy,"—Londop Standard.